```
SEQUENCE LISTING
  <110> Bayer AG
  <120> Plant phosphomevalonate kinases
  <130> Le A 35 018
  <140>
  <141>
  <160> 5
  <170> PatentIn Ver. 2.1
  <210> 1
  <211> 2396
  <212> DNA
  <213> Arabidopsis thaliana
  <220>
J
  <221> CDS
Ф
  <222> (685)..(2199)
Ö
Щ
Œ
  gtcgacccac gcgtccgggc cgaccttctt cttcttcctt aagacaacac ataatgatag 60
m
  aagcaaactg gggaagatga agatggagtg gtgaagaaca aaaccgtata accgttcggt 120
Ŧ
  tcagaggtgc cgaaccgaac cgacccgtaa accgaaatcc tcaaaagaaa ttgccgatcg 180
nA
l=A
  N
gtttctcggt ttcttccgaa ctcccaggcc tagtttggtt ttattttca cgagttttgc 300
ttctcttttc atcggcgacg acgacgtcga gtttctgtca aaacgttaac gatccgactc 360
  gagcgtcgac agtaagagaa gaagacagcg attgtgtgta gatcgacggc gaacgtgtgt 420
  cgatccgtct cgatcgacgg agaatacgtt tcgatccggt ttcgatccaa atcggagagt 480
  ttgaggatct aaatcggaaa ttgcattaat actcatctcc aatctcttct gaagagtccg 540
  aatccgatct accaccacta ctcgtaccgc cggtcattta ctgccgccga tttcaaatta 600
  teegateatt teeggegata teeaategea gaetgaggtg aatetggggt titgateage 660
                                                                  711
  gattatettt gteactettt gaaa atg get gtt gtt get tet get eet ggg
                            Met Ala Val Val Ala Ser Ala Pro Gly
                                                                  759
  aaa gtt ttg atg act gga ggc tac ctt gta ctc gag aag cca aat gca
  Lys Val Leu Met Thr Gly Gly Tyr Leu Val Leu Glu Lys Pro Asn Ala
   10
  ggg ctt gtg ttg agt aca aat gca cgg ttt tac gcg att gtg aag cca
                                                                  807
  Gly Leu Val Leu Ser Thr Asn Ala Arg Phe Tyr Ala Ile Val Lys Pro
                   30
```

atc aac gaa gaa gtc aag cct gaa agt tgg gca tgg aaa tgg aca gat Ile Asn Glu Glu Val Lys Pro Glu Ser Trp Ala Trp Lys Trp Thr Asp

50

45

855

55

	_						_		_	aga Arg	_	_	_			_	903
										gtg Val							951
	aac Asn 90	ccc Pro	ttt Phe	gta Val	gag Glu	cat His 95	gcg Ala	ata Ile	cag Gln	tat Tyr	gct Ala 100	ata Ile	gct Ala	gct Ala	gct Ala	cat His 105	999
										ttg Leu 115							1047
										aat Asn							1095
										ttg Leu							1143
										ttc Phe							1191
	ggt Gly 170	gct Ala	aat Asn	tcc Ser	aag Lys	cct Pro 175	gaa Glu	gta Val	gca Ala	aaa Lys	act Thr 180	ggc Gly	tta Leu	ggt Gly	tct Ser	tct Ser 185	1239
	gca Ala	gca Ala	atg Met	aca Thr	aca Thr 190	gct Ala	gtg Val	gtt Val	gca Ala	gct Ala 195	ctg Leu	tta Leu	cat His	tat Tyr	ctt Leu 200	gga Gly	1287
		_	_			_		-		gaa Glu		_			_		1335
										caa Gln							1383
										gtc Val							1431
	_	_	_		_	_				gaa Glu	_	_			_	-	1479
	_	_	_			_				gaa Glu 275	_					-	1527
										gag Glu							1575
	atg	aat	ctt	ttc	ctt	gga	gaa	cct	gga	agt	ggt	gga	tcc	tcc	aca	cca	1623

	Met	Asn	Leu 300	Phe	Leu	Gly	Glu	Pro 305	Gly	Ser	Gly	Gly	Ser 310	Ser	Thr	Pro	
															gag Glu		1671
	_	_	-			-		_		-	-			_	ctg Leu	-	1719
															gat Asp 360		1767
															aag Lys		1815
															gaa Glu		1863
															cgt Arg		1911
															act Thr		1959
															ggt Gly 440		2007
	cct Pro	gga Gly	gct Ala	ggt Gly 445	gga Gly	ttt Phe	gat Asp	gcc Ala	ata Ile 450	ttt Phe	gca Ala	atc Ile	act Thr	tta Leu 455	Gly ggg	gat Asp	2055
															ttg Leu		2103
															ggt Gly		2151
															ctt Leu		2199
	taaa	caac	at t	gttt	cagt	g to	caat	tatt	agg	rtgcg	tca	ccaa	gtto	gg t	tgag	tatac	2259
	tgttttgcat atagacttgg gtgctaaatt tcttggtgta agcattttta tacccattgt													attgt	2319		
	aaggtettta aetettggaa aaettgeggg aaaataaaat													tcttc	2379		
	tcaaaaaaa aaaaaaa													2396			

<210> 2 <211> 505

<212> PRT <213> Arabidopsis thaliana

Ü

M

Ü

Met Ala Val Val Ala Ser Ala Pro Gly Lys Val Leu Met Thr Gly Gly Tyr Leu Val Leu Glu Lys Pro Asn Ala Gly Leu Val Leu Ser Thr Asn Ala Arg Phe Tyr Ala Ile Val Lys Pro Ile Asn Glu Glu Val Lys Pro Glu Ser Trp Ala Trp Lys Trp Thr Asp Val Lys Leu Thr Ser Pro Gln Leu Ser Arg Glu Ser Met Tyr Lys Leu Ser Leu Asn His Leu Thr Leu Gln Ser Val Ser Ala Ser Asp Ser Arg Asn Pro Phe Val Glu His Ala Ile Gln Tyr Ala Ile Ala Ala Ala His Leu Ala Thr Glu Lys Asp Lys 105 Glu Ser Leu His Lys Leu Leu Cln Gly Leu Asp Ile Thr Ile Leu 120 Gly Ser Asn Asp Phe Tyr Ser Tyr Arg Asn Gln Ile Glu Ser Ala Gly Leu Pro Leu Thr Pro Glu Ser Leu Gly Thr Leu Ala Pro Phe Ala Ser 150 🗠 Ile Thr Phe Asn Ala Ala Glu Ser Asn Gly Ala Asn Ser Lys Pro Glu 170 Val Ala Lys Thr Gly Leu Gly Ser Ser Ala Ala Met Thr Thr Ala Val Val Ala Ala Leu Leu His Tyr Leu Gly Val Val Asp Leu Ser Asp Pro Cys Lys Glu Gly Lys Phe Gly Cys Ser Asp Leu Asp Val Ile His Met Ile Ala Gln Thr Ser His Cys Leu Ala Gln Gly Lys Val Gly Ser Gly Phe Asp Val Ser Cys Ala Val Tyr Gly Ser Gln Arg Tyr Val Arg Phe 250 Ser Pro Glu Val Leu Ser Phe Ala Gln Val Ala Val Thr Gly Leu Pro 260 Leu Asn Glu Val Ile Gly Thr Ile Leu Lys Gly Lys Trp Asp Asn Lys Arg Thr Glu Phe Ser Leu Pro Pro Leu Met Asn Leu Phe Leu Gly Glu

Pro Gly Ser Gly Gly Ser Ser Thr Pro Ser Met Val Gly Ala Val Lys

- 5 -

315 320 310 305 Lys Trp Gln Met Ser Asp Pro Glu Lys Ala Arg Glu Asn Trp Gln Asn 325 330 Leu Ser Asp Ala Asn Leu Glu Leu Glu Thr Lys Leu Asn Asp Leu Ser Lys Leu Ala Lys Asp His Trp Asp Val Tyr Leu Arg Val Ile Lys Ser 360 Cys Ser Val Leu Thr Ser Glu Lys Trp Val Leu His Ala Thr Glu Pro Ile Asn Glu Ala Ile Ile Lys Glu Leu Leu Glu Ala Arg Glu Ala Met 390 Leu Arg Ile Arg Ile Leu Met Arg Gln Met Gly Glu Ala Ala Ser Val 410 Pro Ile Glu Pro Glu Ser Gln Thr Gln Leu Leu Asp Ser Thr Met Ser 425 430 d) Ala Glu Gly Val Leu Leu Ala Gly Val Pro Gly Ala Gly Gly Phe Asp O 435 440 TAla Ile Phe Ala Ile Thr Leu Gly Asp Ser Gly Thr Lys Leu Thr Gln Ala Trp Ser Ser His Asn Val Leu Ala Leu Leu Val Arg Glu Asp Pro His Gly Val Cys Leu Glu Ser Gly Asp Pro Arg Thr Thr Cys Ile Thr 490 Ser Gly Val Ser Ser Ile His Leu Glu 500

```
<210> 3
<211> 611
<212> DNA
<213> Medicago truncatula
```

<400> 3
ctgttatctg agttgaagaa atatcacaat atcaatggcc gtggtggttg cttctgctcc 60
tgggaaggtg ttaatgaccg gtggctacct agttttagag agacctaatg ctggacttgt 120
tcttagtact aatgctcgtt tttatgctat tgtcaaacca atctatcctc aaactaaacc 180
tgattcttgg gcttgggctt ggtcagatgt cagattaaca tctcctcaac tctccagaga 240
agccttctat aaattagcac tcaaaaatct taccatccaa actgtttcct caagtgaaac 300
aaggaaccct tttgtggaat atgctgtgca atactccgtg gctgccgct atgcaacagc 360
tgaccagaat aaaaaggact tgttgcacaa actactttg caaggtcttg acattacaat 420
tttgggttcc aatgatttt attcttatag gaatgagatt gagagacacg gactcccttt 480
gacatcagaa tcattggcca cccttccgcc ttttgcctcc atttcttca atactgatga 540
tgctaatgga aggaattgta agcctgaaat tgccaaaact ggtttgggct catctgcagc 600
aatgacaacc g

<210> 4 <211> 728 <212> DNA

<213> Gossypium hirsutum

<210> 5

```
<400> 4
cgtttttacg ctattgttaa gccaattcat gaagctatca agcctgaaag ctgggcatgg 60
tcttggaccg atgtcaagct aacatctcct cagctttcca gagaaagcat gtataaattg 120
tctcggaaac atttaacact tcagtgtgta tcttcaagtg aatcaaggaa cccttttgta 180
gaaaatgcta ttcaatatac tatagcagct gcacatgcaa catttgacaa gaataagaaa 240
gaggcattag ataaactact cttacaaggt cttgatatta cgatcttagg ttgcaatgac 300
ttttactcat acaggaatca gatagaagca cttggtcttc cgttgacacc tgaagcattg 360
gctactctac caccgtttac atcaattaca ttcaattctg aggaatcaaa tggagcaaat 420
tgcaaacctg aagttgcaaa aactggattg ggttcatctg cagcaatgac aactgctgta 480
gttgctgctt tacttcatta tcttggtgtt gttaaccttt ccacctcttc tgcagatcaa 540
caccaagaaa ataagaattc cacagatctc gatattgtgc atatgatagc tcaaagtgcc 600
cactgtattg cccaaggtaa agttggcagt ggctttgatg tcagttctgc tgtctatggg 660
agtcagcgtt atgttcgtt ttcaccaaaa gtgctttctg ctgctcaggc tgcantgaaa 720
gggatgcc
```